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10/758,322

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Georg Mogk

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EXAMINER

BROWN JR, NATHAN H

ART UNIT

PAPER NUMBER

2121

MAIL DATE

DELIVERY MODE

08/27/2007

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

## Office Action Summary

Application No.

10/758,322

Applicant(s)

MOGK ET AL.

Examiner

Nathan H. Brown, Jr.

Art Unit

2121

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE (3) MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
  - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
  - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 05 June 2007.
- 2a) ☒ This action is FINAL. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1, 3, 5 and 8-12 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1, 3, 5 and 8-12 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a). Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

## Examiner's Detailed Office Action

1. This Office Action is responsive to the communication for application 10/758,322, filed June 5, 2007.
2. Claims 1, 3, 5, and 8-12 are pending. Claims 1, 8, 11, and 12 are currently amended. Claims 2, 4, 6, and 7 are cancelled. Claims 3 and 5 are previously presented.
3. After the previous office action, claims 1, 3, 5, and 7-12 stood rejected.

## Claim Rejections - 35 USC § 112, 1st

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 1, 3, and 10 rejected under 35 U.S.C. 112, 1<sup>st</sup> paragraph because the claimed invention is not enabling due to lack of utility (*see below*). Therefore claims 1, 3, and 10 are also non-statutory under 35 U.S.C. 112, 1<sup>st</sup> paragraph.
6. Claims 8 and 9 are rejected under 35 U.S.C. 101 because the claimed invention is not enabling due to lack of utility. Therefore claims 8 and 9 are also non-statutory under 35 U.S.C. 112, 1<sup>st</sup> paragraph.

7. Claims 11 and 5 are rejected under 35 U.S.C. 101 because the claimed invention is not enabling due to lack of utility (*see* below). Therefore claims 11 and 5 are also non-statutory under 35 U.S.C. 112, 1<sup>st</sup> paragraph.

8. Claims 12 is rejected under 35 U.S.C. 101 because the claimed invention is not enabling due to lack of utility (*see* below). Therefore claim 12 is also non-statutory under 35 U.S.C. 112, 1<sup>st</sup> paragraph.

### Claim Rejections - 35 USC § 112, 2nd

9. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

10. Claims 1, 3, 5, and 8-12 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Independent amended claims 1, 8, 11, and 12 recite the working range of the neural network being determined by a convex envelope defined around training data. However, it is not disclosed what being “inside or outside the convex envelope” or being within the “permitted working range of the neural network” (*see* Specification [0012]) means for the manufacturing processes and data categories recited. Thus, while the data processed by the algorithm may be real-world data, the result is considered ambiguous. As close

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as the Specification gets to disclosing what being within the “permitted working range of the neural network” means is:

[0020] In the practical application, in particular in time-critical applications, it is of particular significance to use efficient procedures in order to determine whether an input data record is in the permitted working range of the associated neural network.

However, [0020] only relates the data record to “the permitted working range of the associated neural network” where it should have related the state of the manufacturing process or materials undergoing some manufacturing process to “the permitted working range of the associated neural network”. The dependent claims 3, 5, 9, 10, and 12 do not cure the deficiency of the independent claims, thus claims 1, 3, 5, and 8-12 are considered non-statutory under 35 U.S.C. 112, second paragraph.

### Claim Rejections - 35 USC § 101

9. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

10. Claims 1, 3, and 10 rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter: abstraction, algorithm and/or software per se. Amended independent claim 1 recites a: “method for checking whether an input data record is in a working range of a neural network, the input data record being manufacturing process data selected from...(c) delivering result that input data record is inside or outside the working range of the used neural network through confirming that the input data is respectively inside or

outside the convex envelope.” Examiner considers this process claim to recite the 101 judicial exception of algorithm while claiming no physical transformation and returning no substantial and specific result.

While the data processed by the algorithm may be real-world data, the result is considered to be abstract as it is being “inside or outside the convex envelope” could mean anything for the possible manufacturing processes for the data categories recited. Examiner considers being “inside or outside the convex envelope” abstract whereas the commonly provided examples of practical results, i.e., the final share price momentarily fixed for recording and reporting purposes (from State Street) and the blood sugar level measurement for medical diagnosis, are clearly non-abstract representations of qualities of entities in their respective problem domains. Claims 3 merely provides algorithmic detail while claim 10 states recites a storage medium for a program which can carry out the instructions of claim 1. Since claims 3 and 5 depend from claim 1 without curing the deficiency of claim 1, claims 1, 3, and 5 are considered non-statutory under 35 U.S.C. 101.

11. Claims 1, 3, and 10 rejected under 35 U.S.C. 101 because the claimed invention lacks utility. Amended independent claim 1 lacks utility as the result it recites is abstract (*see above*). Since claims 3 and 5 depend from claim 1 without curing the deficiency of claim 1, claims 1, 3, and 5 are considered non-statutory under 35 U.S.C. 101.

12. Claims 8 and 9 are rejected under 35 U.S.C. 101 because the claimed invention lacks utility. Independent amended claim 8 recites a system having the means to produce the result of claim 1. Since the result of claim 1 is considered to lack utility (*see above*), the means of claim 8 is considered to lack utility. Claim 9 merely states that claim 8 carries out the checking according to claim 1. Since claim 9 depends from claim 8 without curing the deficiency of claim 8, claims 8 and 9 are considered non-statutory under 35 U.S.C. 101.

13. Claims 11 and 5 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter: abstraction, algorithm and/or software per se. Amended independent claim 11 recites an algorithm to provide the result of claim 1. Examiner considers this process claim to recite the 101 judicial exception of algorithm (steps (a)-(c)) while claiming no physical transformation and returning no substantial and specific result. Claim 11 is non-statutory in the same fashion as is claim 1 (*see above*). Claim 5 merely provides a hyper-plane equation which gives the mathematical definition of the data checking. Since claim 5 depends from claim 11 without curing the deficiency of claim 11, claims 5 and 11 are considered non-statutory under 35 U.S.C. 101.

14. Claims 11 and 5 are rejected under 35 U.S.C. 101 because the claimed invention lacks utility because the result it produces is abstract (*see above*). Claims 11 and 5 are considered to lack utility in the same way as claims 1, 3, and 10 (*see above*). Since claim 5 depends from claim 11 without curing the deficiency of claim 11, claims 5 and 11 are considered non-statutory under 35 U.S.C. 101.

15. Claims 12 is rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter: mathematical algorithm. Amended independent claim 12 recites the mathematical steps to carry out claim 1. Claim 12 clearly recites only the 101 judicial exception of the algorithmic application of mathematical principals. Claim 12 is therefore considered to be non-statutory under 35 U.S.C. 101.

16. Claims 12 is rejected under 35 U.S.C. 101 because the claimed invention lacks utility. Amended independent claim 12 recites the same result as claim 1. Since the result of claim 1 is considered to lack utility, so is the result of claim 12. . Claim 12 is therefore considered to be non-statutory under 35 U.S.C. 101.

New grounds of rejection are provided for amended claims.

## Response to Arguments

17. Applicant's arguments filed June 5, 2007 have been fully considered.

### Claim Rejections Under 35 U.S.C. §101

Applicants argue:

Applicants have now amended claims 1, 8, 11 and 12 to overcome the rejections under 101 and submit that the object of the invention is not the mathematical algorithm itself. It is stressed that the claims claim a method and system for checking whether an input data



record is in a working range of a neural network. The input data record are manufacturing process data such as data relating to the materials used, composition data, parameters of the production system, pressure data and/or temperature data. The working range is defined by the convex envelope formed by training input data records of the neural network. The result is also claimed in that the input data record is inside or outside the working range of the used neural network through confirming that the input data is respectively inside or outside the convex envelope. Thus, the method and system for checking whether an input data record of manufacturing process data of materials used, composition data, parameter of the production system, pressure or temperature data are within the working range of a neural network is statutory subject matter and not an algorithm or mathematical manipulation.

Examiner responds:

Applicants' amendments do not cure the 101 deficiencies cite above because the result of being "inside or outside the convex envelope" is intrinsically abstract and it is not disclosed how being "inside or outside the convex envelope" relates to any state of a manufacturing process or the materials undergoing a manufacturing process. Examiner maintains 101 rejections and adds 112, 1<sup>st</sup> rejections for lack of enablement.

#### Claim Rejections Under 35 U.S.C. §102

Applicants' arguments are moot due to amendments. All rejections under 35 U.S.C. §102 are withdrawn due to amendments.

#### Claim Rejections Under 35 U.S.C. §103

The rejection under 35 U.S.C. §103 of claim 10 is withdrawn due to amendments.

## Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

## Correspondence Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nathan H. Brown, Jr. whose telephone number is 571-272- 8632. The examiner can normally be reached on M-F 0830-1700. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Anthony Knight can be reached on 571-

272-3687. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



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Nathan H. Brown, Jr.  
August 20, 2007